

CLAIM AMENDMENTS:

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1-3 cancelled.

4. (currently amended) A machine for superfinishing ~~tools~~ a workpiece through honing or precision grinding, the machine comprising:

a spindle housing;
a honing spindle disposed in said spindle housing;
a first electromotor having a stator integrated in said spindle housing and a rotor borne for rotation within said stator, said rotor surrounding and rotating said honing spindle;
a linear motor having a moving part bearing said spindle housing for controlling a stroke motion of said honing spindle;
a bar disposed within said honing spindle for rotation therewith; and
a second electromotor coaxially flanged to an end of said spindle housing, said second electromotor communicating with said bar for axial displacement thereof to widen a honing tool disposed on said honing spindle or to carry a grinding body.

5. (previously presented) The machine of claim 4, wherein said second electromotor comprises a driven shaft which engages in a coupling piece and rotates same, said coupling piece comprising a plunger provided with an outer thread which engages in an inner thread of an adjusting sleeve which is axially displaced upon rotation of said

coupling piece due to engagement of said inner and outer threads and to which a further sleeve is connected for axial displacement within a transmission housing without rotating, wherein a connecting rod which can be connected to said bar is rotatably disposed in said further sleeve.

6. cancelled.

7. (new) A machine for superfinishing a workpiece through precision grinding with a grinding body, the machine comprising:

a spindle housing;

a spindle disposed in said spindle housing;

a first electromotor having a stator integrated in said spindle housing and a rotor borne for rotation within said stator, said rotor surrounding and rotating said spindle;

a first linear motor having a moving part bearing said spindle housing for controlling a stroke motion of said honing spindle;

a bar disposed within said spindle for rotation therewith; and

a second linear motor for axial displacement of said bar,

wherein an end of said bar cooperates with the grinding body.

8. (new) The machine of claim 7, wherein said second linear motor has a runner and stator which are round, wherein said runner is disposed in said stator to communicate with said bar.

9. (new) A machine for superfinishing a workpiece through honing or precision grinding, the machine comprising:

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a spindle housing;
a honing spindle disposed in said spindle housing;
a first electromotor having a stator integrated in said spindle housing and a rotor borne for rotation within said stator, said rotor surrounding and rotating said honing spindle;
a linear motor having a moving part bearing said spindle housing for controlling a stroke motion of said honing spindle;
a bar disposed within said honing spindle for rotation therewith; and
means for axial displacement of said bar to widen a honing tool disposed on said honing spindle or to carry a grinding body, wherein said first electromotor and said linear motor are disposed, structured, and dimensioned to generate a stroke length of 80mm at a stroke speed of up to 50m/min with a reversal accuracy of ≤ 0.05 mm and to generate a stroke length of 20mm at a stroke speed of up to 25m/min with a reversal accuracy of ≤ 0.04 mm.

10. (new) The machine of claim 9, wherein the machine generates a cross grinding pattern on a surface of the workpiece having an angle of more than 10° .
11. (new) The machine of claim 10, wherein the machine generates a cross grinding pattern on a surface of the workpiece having an angle of less than 50° .